

AMENDMENTS TO THE CLAIMS

Listing of the Claims

The following listing of claims replaces all previous listings or versions thereof:

1. (Original) An isolated nucleic acid segment encoding a polypeptide comprising the sequence as shown in SEQ ID NO:2.
2. (Original) The isolated nucleic acid segment of claim 1, wherein the nucleic acid segment comprises the DNA sequence as shown in SEQ ID NO:1.
3. (Original) The isolated nucleic acid segment of claim 1, further comprising a promoter operably linked to the region encoding said protein.
4. (Original) The isolated nucleic acid segment of claim 3, wherein said promoter is an inducible promoter, a constitutive promoter or a tissue specific promoter.
5. (Original) The isolated nucleic acid segment of claim 4, wherein said tissue specific promoter is a bone specific promoter.
6. (Original) The isolated nucleic acid segment of claim 1, wherein said nucleic acid segment is comprised within a viral vector.
7. (Original) The isolated nucleic acid segment of claim 6, wherein said viral vector is selected from the group consisting of an adenoviral vector, a retroviral vector, an adeno-associated viral vector, a vaccinia viral vector, a herpesviral vector and a pox viral vector.
8. (Original) The isolated nucleic acid segment of claim 1, wherein said nucleic acid segment is comprised within a non-viral vector.
9. (Original) The isolated nucleic acid segment of claim 8, wherein said non-viral vector is comprised in a lipid carrier.

10. (Original) The isolated nucleic acid segment of claim 1, further comprising a region encoding a selectable marker protein.
11. (Original) A nucleic acid segment characterized as:
 - (a) a nucleic acid segment comprising a sequence region that consists of 14 nucleotides that have the same sequence as, or complementary to, at least 14 contiguous nucleotides of SEQ ID NO:1; or
 - (b) a nucleic acid segment of from 14 to 10,000 nucleotides in length that hybridizes to the nucleic acid segment of SEQ ID NO:1, or the complement thereof, under stringent hybridization conditions.
12. (Currently amended) The nucleic acid segment of claim 11, wherein the segment comprises a sequence region of at least 14, at least 17, at least 20, at least 25, or at least 30 contiguous nucleotides from SEQ ID NO:1 or the complement thereof.
- 13-16. (Canceled)
17. (Currently amended) The nucleic acid segment of claim 11, wherein the segment is at least 17, at least 20, at least 25 or at least 30 nucleotides in length.
- 18-20. (Canceled)
21. (Original) An isolated polypeptide comprising the sequence as shown in SEQ ID NO:2.
22. (Original) The isolated polypeptide of claim 21, wherein the polypeptide is comprised in a pharmaceutically acceptable carrier, diluent or excipient.
23. (Original) The isolated polypeptide of claim 22, wherein the pharmaceutically acceptable carrier is a lipid carrier.
24. (Original) The isolated polypeptide of claim 23, wherein the lipid carrier is a liposome.
25. (Original) The isolated polypeptide of claim 23, further comprising a bone tissue targeting agent.

26. (Original) A recombinant host cell comprising a nucleic acid segment encoding a polypeptide comprising the sequence as shown in SEQ ID NO:2.

27-32. (Canceled)

33. (Original) A method of identifying a subject at risk of or suffering from a bone degenerative disease comprising:

(a) obtaining a bone tissue sample from said subject; and

(b) assessing the expression of HA4 in said sample,

wherein a reduced amount of HA4 expression in said sample, as compared to the HA4 expression observed in a healthy subject, indicates that said subject is at risk of or suffers from a bone degenerative disease.

34-35. (Canceled)

36. (Original) A method of treating a bone degenerative disease in a subject comprising increasing the level or activity of HA4 in bone tissues of said subject.

37-58. (Canceled)

59. (Original) A method of expressing an HA4 polypeptide in a cell comprising transferring into said cell an expression construct encoding an HA4 under control of a promoter active in said cell, wherein said expression construct effects the expression the HA4 polypeptide.